pathological, spasticity and paralysis, are of value, but they are more changeable and unreliable where the injuries are multiple.

In a case, for example, having a direct injury in the right parietal-temporal region, with tearing of the anterior or posterior branch of the middle menigeal, and a contrecoup contusion and laceration of the cortex, the reflexes and paralysis would probably indicate the contrecoup injury, but the pupils would give evidence of the increasing extradural clot on the right and, along with properly interpreted X-ray, would indicate the location for decompression.

Operation is not indicated, (1) brain injuries so extensive that all reflexes, superficial and deep, are suspended. (2) When the pulse is above 110, if the rapid rate is due to shock alone; given time it will slow down and then decompression may be performed, if indicated; if due to destruction of brain the pulse continues to increase, and any operative interference would only hasten the end. (3) When all the signs of compression develop very rapidly, for example, in thirty minutes to one hour. (4) Medullary edema manifested by rapid pulse, respiration and rising temperature.

Operation is indicated—(1) Depressed fractures. (2) Any case of gradual increasing cerebral compression, regardless of whether it is due to extradural hemorrhage, intradural hemorrhage of parenchymatous edema. (3) Any case showing definite localizing irritative or paretic signs.

Post epileptic coma, often because of the presence of recent scalp injury, is at times mistaken for fracture, with brain injuries. Cerebral apoplexy in cases that have had recent scalp injuries and comas, uremic, diabetic, or narcotic poisonings, are likewise an occasional cause for confusion.

Treatment consists in complete rest in a quiet, dark room, head and shoulders elevated, ice cap to head, heat to extremities, and constant observation.

CONGENITAL PYLORIC STENOSIS *

By ALANSON WEEKS, M. D., San Francisco, Cal.

This subject has been so thoroughly handled in the literature of late years, that the only excuse for bringing it up again is to remind us all that we are probably overlooking some of these cases. It does not seem reasonable that the pediatricians in San Francisco and Los Angeles should see as many of these babies as they do, and yet so few be reported from the rest of the state. It has been variously estimated that from one to three per cent of young babies needing doctors' care suffer from this disease to a greater or less extent.

The diagnosis, it would seem, is simple, the symptoms usually appearing on an average of from four to seven weeks after birth. The most marked symptom is vomiting, which is characteristically projectile, and with this vomiting a rapid loss of weight; the loss of weight and the character of the stools depending, of course, upon how much or how little food passes the pylorus. Upon the appearance of these symptoms, if the baby is inspected in a good light, the visible peristaltic waves in the epigastric region moving from left to right as the stomach is making violent efforts to force material past the pylorus are easily seen. A number of men have reported that they are able to palpate the tumor. I have been able to do so only a few times and I do not think, in as much as the other signs are so evident, that either the X-ray or the palpation of the tumor are necessary for prompt and proper diagnosis. This statement is based upon the fact that in only one patient out of forty operated upon with this diagnosis, have we failed to find the very definite hard tumor.

The question of medical or surgical treatment constantly arises. I wrote to twenty pediatricians in the State of California and received answers from ten, and asked them the following questions:

"Will you please tell me what is your present treatment for congenital pyloric stenosis?

"How long do you use the thickened feedings before resorting to surgery?

"What percentage of babies, in your experience, suffer from this condition?"

The consensus of opinion of the ten who specialized in the treatment of children was, that these babies should be tried on thickened feedings if received early enough, and if this treatment did not, within two days, show that the baby was holding its own or improving, the patient should then be subjected to surgical treatment.

Dr. Langley Porter answered as follows:

"Our present treatment for pyloric stenosis, if the baby is in good condition, is always to try it on thick cream of wheat or farina feeding. If it still vomits, or if a diarrhœa is set up, or if there is a loss of weight for four consecutive days, then we refer to the surgeon."

Drs. Dietrick and Berkley, of Los Angeles, made the following answer:

"Our present treatment in pyloric stenosis is thick feedings with surgery later, if necessary.

"We recommend surgical interference as soon as, in our judgment, the continuation of medical treatment seems to be jeopardizing the infants' chances of ultimate recovery.

"We do not believe in reducing the child's operative risk to zero before operating."

From the above, and also from the fact that we know of a number of patients with the same men making the diagnosis who made them when we operated upon so many others, that many babies have recovered with the use of the thickened feedings. We have, therefore, to modify our dogmatic statements of a few years ago and admit that a certain percentage of these patients will recover on medical treatment alone, but it is also evident from the answers received that in no case should the baby be allowed to be injured by medical care when it is so perfectly evident that the surgical risk is so much smaller.

We have operated upon sixteen babies since the spring of 1919, with one death. This death occurred in a baby five weeks old, referred to us by Dr. Langley Porter. The child was premature and of low vitality, and was suffering with a marked enteritis at the time the operation was

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

performed. A typical tumor was found at the pylorus. The Fredet operation was done, and even though the child had vomited everything before the operation, he did not vomit following the operation. However, the enteritis continued, and death occurred sixteen days after the operation. This death was undoubtedly due to the enteritis, which Dr. Porter feels could reasonably be blamed to the thickened feeding.

The last baby of this series of sixteen was an eight months' premature, and was one month old when brought to operation. He weighed six and one-half pounds at birth, and at operation weighed four and one-half pounds. Dr. Fleischner, with whom we saw this patient within an hour after it was brought into San Francisco, had his doubts about the baby being able to stand surgery, but in as much as it seemed hopeless otherwise, we urged operative treatment, and within another hour a marked tumor was exposed and divided by the Fredet method. Anesthesia for this operation lasted fifteen minutes. The baby is now well and in apparently good condition.

Some years ago we reported a series of some twenty other cases of patients with congenital pyloric stenosis subjected to surgery. In that series of twenty were two babies of the same mother. These were her first two children—boys. She had after that time a third boy who was perfectly normal and healthy. One of the patients in the present series is a girl baby, the fourth child of this same mother, upon whom the Fredet operation was done. We report this fact of the same mother having three babies with the same condition, and one without, with the hope that it may in some way aid in clearing up the cause of congenital pyloric stenosis because, being purely in the realm of conjecture, no definite logical reason so far has been offered.

The Fredet operation, improperly named after Rammstedt, has been so thoroughly pictured and described that it is only necessary to remark that the simple splitting of the tumor mostly by divulsion down to the mucus membrane, with care being used at both ends, and especially at the duodenal end where the tissues are so thin, so as not to tear through the lumen of the stomach or bowel, is so simple and can be done so rapidly that, from a surgical standpoint, one should have no mortality if the babies are not kept under observation and medical care until it is too late for either medicine or surgery to be of value.

Since using the incision high up in the middle of the right rectus over the liver, suggested by Dr. Butler, in as much as the liver drops back over the operative wound, we have no trouble from hernia or protrusion of the delicate omentum. The abdomen should be closed in layers exactly as in an adult.

The rate of illegitimate births in the United States, insofar as we can assume that the sections for which adequate data are available are representative, is considerably lower than that in most European countries. Inadequacy of birth registration in this country makes it impossible to make proper comparisons, but apparently the usual proportion of illegitimate births to total births is from 3 to 4 per cent.

SURGICAL RESULTS FROM AN ECONOMIC STANDPOINT *

By GAYLE G. MOSELEY, M. D., San Francisco.

The economic result of surgery is not a new problem, but it is a problem which, owing to new experiences and changed conditions, presents a new viewpoint. The most important function of surgery, of course, is to prolong human life and relieve pain. After these are accomplished, the outstanding problem is the economic result. Medicine and surgery are recognized as important factors in industrial production. No large business enterprise is now undertaken without competent medical supervision, and it is the duty of the medical profession to study industrial needs from a medical standpoint, and be prepared to offer suggestions to industry that will make the service of the physician more valuable.

In the past, the initiative in this line has come from industry, and unless the medical profession, by proper organization and education, prepare themselves to furnish the necessary service and advice, industrial medicine will soon be dominated by industry, instead of by the physician.

One very important problem before the profession today, and the issue should be squarely met, is that of standardizing surgical results. Dr. Harry Mock[1] states the case very clearly, when he says, "All standards of treatment in the future must be judged by the economic end results obtained."

The same forces which have operated to standardize medical schools and hospitals, will in time bring about, within reasonable limits, the standardization of surgical results. While we all realize that in any particular case, there may be peculiar conditions present, such as old age or previous disease, which may modify the result, yet when you take a very large number of the same kind of surgical patients, the average result, and the average lost time, should not vary greatly. The records of any large insurance company, doing compensation business in the State of California, will show that there is a great variation in the results obtained in cases of approximately the same kind by different physicians. This variation is so great, that it cannot be wholly accounted for by the different conditions present in the individual patient. The statistics of the large insurance companies, if tabulated, will very quickly show who are the best surgeons in the state, judging from the economic results obtained and, after all, results are what count.

When you consider that the insurance companies writing compensation business in the State of California are paying about $3,000,000 yearly for medical and hospital services, it is evident that, with the record of results before them, they are going to employ those physicians who get the best results in the shortest time, and this is the answer to that much-discussed question that the injured employe should have free choice of physicians. Until such time as all physicians are equally competent, this would be an economical

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